

# Online Shopping During Covid 19 Pandemic: The Students' Perception in Malaysia

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## **Abstract**

**Purpose:** This research is looking at the variables influencing students' insights of online purchasing during the COVID-19 pandemic. The city's lockdown and commercial centre closures during COVID-19 impacted daily life, business, and activities. Today, online business is a powerful method to reduce physical business activities. In this pandemic, many people choose to use online shopping to buying their goods. E-commerce is slowly changing every one of us, and online shopping has gradually become a mass consumption model, permeating all social strata. Hence, it is of practical implication to analyse the determining factors of online shopping behaviour. This study on perceived ease of used, perceived usefulness, reduced time, convenient, security and privacy, are the main factors in affecting students' perception of online shopping during Covid-19 pandemic. The theoretical underpinnings of this study are the Technology Acceptance Model (TAM) and the Theory of Planned Behavior (TPB). Based on the literature, a self-administered questionnaire was created. Additionally, 200 respondents from Malaysian institutions of higher learning participated in the study's conclusion. According to this study, the information gathered is extremely valuable and beneficial to students, academics, researchers, educational institutions, commercial companies, and the public sector.

**Design/methodology/approach:** A cross sectional study was used performing the research over the course of six months. 200 respondents were surveyed online for data, which was then evaluated using SPSS.

**Findings:** The outcome of this study proves that students' perceptions of online buying during the COVID-19 epidemic are influenced by convenience, time savings, security, and privacy. However, throughout the COVID-19 epidemic, students' perceptions of perceived utility and perceived ease of use are unaffected.

**Originality/value:** Aims to recognise and test the components that influence students' opinions of internet buying during the Covid-19 epidemic. Convenience, perceived simplicity of use, perceived usefulness, saved time, security, and privacy are among the variables. Students who are doing their tertiary education in Malaysia participated in the survey as respondents.

**Keywords:** Online shopping, perception, Covid-19, perceived ease of use, perceived usefulness, reduced time, convenience, security and privacy

### **Introduction**

Nowadays most of the nations around the world are suffering from the Covid-19 pandemic. Covid-19 is affecting many countries globally (WHO, 2020). Covid-19 is a virus that may transmit from human to human. Because of the Covid-19 virus, there are 4 million people who have died in the world until today (Worldometer, 2021). As a result, it has affected all parts of the world, especially economically, with the establishment of a Movement Control Order (MCO) in Malaysia, it was difficult for people to move from one place to another place. For example, cannot go over 10km above to buy food, water, and daily items. Thus, consumers are turning to online shopping. It has been nearly a year and a half since the Covid-19 pandemic, and people are choosing to buy needed supplies in a more convenient way.

"Home economy" activities having exploded under the pandemic, including e-commerce, online shopping, and online entertainment, with digital consumption providing not only a new push for national economies' internal circulation, but also a new dawn for global economies. During the pandemic, people often hear of frontline medical workers being called heroes. They are the ones who come into direct contact with the patients and risk their lives to treat and care for them. However, few people realize the great impact and contribution that the front-line personnel responsible for delivery have on society. Because of them, people can be safe and secured at home. In this challenging time, delivery workers have braved the Covid-19 pandemic to deliver packages to Malaysian consumers, ensuring safe and secure access to daily necessities.

The Internet is a type of network media, as well as a method of worldwide market transaction for customers. Within the last few decades, the Internet has grown immensely, and there are many ways to connect and exchange information, services, and products via the Internet (Albarq, 2006). Consumers can pay with a credit card or debit card, or through third-party online transfers or cash terms such as PayPal, credit card, Ipay88, online banking, or cash term. From the 1990s, online shopping has gained popularity, with a raise in the number of consumers shopping various products through the Internet (Zhou, et., 2007). According to ACNielsen (2007), there are around 627 million people in the globe who purchase online. Online shopping is a way of consumption for most people, especially teenagers such as college students. With the change of times, online shopping has become a crucial part of our day-to-day life. Taobao, Shopee, Lazada, these words have become the common language of college students. Buying good things at a reasonable price is also constantly discussed on campus and in dormitories. For online shopping, male students are more concerned about the reliability of website information, while female students are more concerned about the quality of products purchased online. As online shopping gradually replaces physical shopping, it is because physical shopping is considered to take more time such as traffic congestion. Not everyone lives near a shopping mall or supermarket. To go to the nearest shopping malls and supermarkets, folks who live far away must use public transit or drive their own automobiles. Money will be wasted on gas and transportation. Once people shop online, any goods purchased through online shopping will be delivered right to consumer door, allowing consumer to shop without leaving their house. In comparison with physical shopping, online shopping offers many advantages from the point of view of the consumer, as it can save time, cash, and attempt (Liu et al., 2012, Kim et al., 2008). Consumer behaviour towards online shopping is significantly impacted by these benefits (Delafrooz et al., 2011).

The internet has really changed people's way of life, making it possible to know what's going on at home with just a click of the finger. The concept of online shopping may have seemed

quixotic a few years ago, but it is now widely used and traded around the world, which is impressive. Moreover, online shopping will have better 24-hour customer service, which will bring customers many benefits and advantages in terms of product details, prices, choices and convenience. The pandemic is still not over, and people are still staying at home and doing online shopping. Frontline logistics personnel will continue to do everything they can to ensure that every package is delivered to the customer.

### **Literature Review**

Davis established the Technology Acceptance Model (TAM) in 1989. It is an important technological acceptance models, relying on the Theory of Reasoned Action (TRA) (Neil Charness, 2016). Two major elements determine the acceptance of an information system: ease of use and usefulness. Although several theories established to examine the relationship in the information systems sector, this model has been highly praised and used.

According to Davis, the subjective chance that a certain application framework would enhance the intended user's quality of life or job performance. A target system's perceived ease of use (EOU) is based on how simple a potential user thinks it is to use. People's opinions on how well the system works are probably influenced by how simple and helpful they think it is, and they also show the variety of purposes for which people use the system. TAM also holds that there is a connection between usability and utility, and that a system's usability may affect how helpful it is viewed. (Vijayarathy, 2003).

TAM contends that the two attitudes about specific behaviours, ease of use and usefulness, define the behaviour and see the reason why people use technology, and that use attitude has a direct influence on actual usage objective. Adam, Todd, and Nelson (1992) mentioned that technology's perceived usefulness is directly related to its ease of use. Three important concepts concerning managing the determinants of computer use are presented by David, Allison, and Rodney (1989). The first is that users can accurately forecast people's computer usage based on their intentions. Following that, the usefulness of perception is the primary factor of why people use computers. Third, ease of use is a secondary factor in how users want to utilise computers. The TAM model employs the Theory of Reasoned Action (TRA) to demonstrate information technology acceptance (Fishbein et al., 1975).

Three different categories of social psychology theories include the Theory of Planned Behavior (TPB), Theory of Reasoned Action (TRA), and Theory of Technology Acceptance Model (TAM). In this study, the Theory of Planned Behavior (TPB) will be used. TPB may be used to assess people's approach towards behavior, subjective norms, and perceived behavioural control. It may also be used to help individuals understand how to change their own conduct. (2016, Management). Typically, the three areas of considerations in the TPB Model are behavioural beliefs, normative views, and control beliefs.

The term "behavioural beliefs" refers to the idea that the behaviour's probable effects may be predicted (Management, 2016). Normative beliefs refer to the strength of one's own convictions, or whether or not other people who matter to them think they should or shouldn't act in a particular way. (Normative Beliefs, n.d.). Control beliefs are concerned with the elements that are thought to assist or influence the performance of a behaviour (Control Beliefs, n.d.). Understanding these ideas is just as essential as knowing people's behaviours and attitudes in predicting their intentions (Theory of Reasoned Action/Planned Behavior, 2009).

Online shopping is a procedure in which a consumer utilises the internet as a conduit to buy items and services directly by a seller, and e-commerce in which the consumer is not essential to use any in-between services to make the transaction (Rizwan, Umair, Bilal, Akhtar, & Bhatti, 2014). Not only this, but consumer intention of online shopping is also that it allows

consumers or e-shoppers to search or and compare products or services from various mortar stores, regardless of where the brick-and-mortar store is placed across the world.

From 1990s, online shopping has multiplied in popularity, with a raise in the number of consumers purchasing various items over the Internet (Zhou, and Zhang and Dai, 2007). Agreeing with previous studies, convenience is an essential aspect of online shopping (Clemes et al., 2014). According to Burke's research, the most often mentioned reason for online shopping is convenience.

On the other hand, the act of buying goods and services online is referred to as online shopping. (Market Business News, 2017). After login onto the seller's website, choosing the tangibles and services, and scheduling the delivery, the customer must pay for the goods or services online with a credit card, debit card, or cash on delivery. (Marketing Business News, 2017). According to Triandis (1979), as quoted by Zarrad & Debabi (2012), intention relates to own self-instructions to act in a specific way, such as "I should do...", "I am going to do...", or "I will do..." Purchase Intention relates to a buyer's willingness to buy goods or services (Chou & Kimsuwan, 2013). According to Zarrad & Debabi (2012), shopping intention may influence real purchase behaviour. Furthermore, shopping intention indicated the likelihood of a consumer's willingness to acquire products (Sam & Tahir, 2008). When individuals want to buy something in the future, they are said to have purchase intention (Cheng & Yee, 2014).

The struggle for Covid-19 began towards the end of 2019. In the initial years of Covid-19 spread, it infected 23 million people over six continents and 216 countries, killing 700,000 people (WHO, 2020). The emergence of Covid-19 in early 2020 had a significant impact on customer behaviour. SARSCOV-2 caused Covid-19, an illness that claimed many individuals. Hence, December 27, 2020, the Covid-19 pandemic had caused above seventy-nine million verified illnesses with more than 1.7 m fatalities worldwide. (World Health Organization,2020).

Covid-19 is a coronavirus that belongs to the similar virus group as some types of the common cold (Alpago and Alpago, 2020). Despite being classified alongside MERS and SARS, it spreads far quicker, does significantly more damage. Covid-19 has far too many psychological, societal, and economic consequences. To reduce the chances of becoming infected, many precautions are performed. However, these measurements have a substantial impact on people's behaviour (Afacan and Avci, 2020).

As a result, the pandemic have a wide range of effects on human behaviour (Bavel et al., 2020). Individuals begun to shun numerous actions they formerly engaged to avoid becoming transmitted with the disease. Many individuals, for example, avoid observing pandemic-related news, discussing about the disease, interacting with others, attending social gatherings, shopping malls, and taking communal transportation (Cirakoglu, 2011). Even though Cirakoglu (2011) claims that individuals are more likely to change the tv station when pandemic-related news is broadcast, Donmez and Gurbuz (2020) discovered that tertiary scholars prefer to learn about Covid-19 through TV news and social media.

According to Davis (1989) and Davis, Warshaw, and Bagozzi (1989), the ease of usage is the extent to make someone deliberate that acquiring a new skill isn't difficult. When this environment is used for online shopping, buyers assume that they would save money and time by using the Internet the least amount possible. (Davis, 1989). When consumers can utilise technology to obtain knowledge without making much attempt, people accept perceived ease of use as an honest criterion. (Davis, 1989). The Technology Acceptance Model considers elements like perceived utility and simplicity of usage. (TAM). TAM identifies the method through which people will accept and make use of the invention.

Consumers view the benefits of their online purchasing experiences as perceived utility, and they perceive the steps leading to this outcome as considered simplicity of use. (Monsuwe,

Ruyter and Dellaert, 2004). Additionally, perceived ease of use relates to consumers' faith in and assumption that hassle-free online shopping would be available. (Rizwan, Umair, Bilal, Akhtar, & Bhatti, 2014). Additionally, according to Ranganathan and Ganapathy, 2002, as reported in Zarrad and Debabi (2012), the difficulty of browsing is regarded as a barrier to making an online purchase. Consumers would rather have basic and easily accessible system while purchasing online, according to Selamat, Jaafar, and Boon (2009). In opposite, if consumers discover that utilising the website is problematic and inconvenient for them, the intent to shop online diminished (Green, Pearson and Pearson, 2007; Cheng and Yee, 2014). According to Teck (2002), the usefulness of online transactions on the World Wide Web is usefulness. Davis (1989) found that the usefulness relationship and the ease of use to usage relationship have similar strength. However, the product's use is farther important than its ease of use.

Research focuses on the usefulness and ease of use of consumers resolve their intention to alter behaviours and attitudes to transform the idea of e-commerce (Davis, 1989). The benchmark is perceived usefulness when individuals feel that utilising a given technology would increase their work performance (Davis, 1989). Another factor that has a positive and significant relationship between the user's intention toward technology adoption, as stated by the Technology Acceptance Model, is the user's age.

Usefulness was determined by a person's perception of a new technology promote their accomplishment (Davis, 1993). The degree to which the Internet may be used in an online shopping environment to raise productivity or performance depends on how valuable it is to customers, who will therefore have a better shopping experience as a result. (Monsuwe, Ruyter and Dellaert, 2004).

Shoppers can save money and time by shopping online (Oja Express, 2018). When people are faced with situational time pressure, promote online buying as reduced time is mostly to be encouraging the use of online shopping will likely be effective (PL Alreck, 2009). Consumers can consume items from the solace of their own residences or workplace and do not have to spend time traveling (Aachri Tyagi, 2021).

Due to the location, consumers may prefer to purchase online by placing purchases from home or at workplace without regard to timing. (Swaminathan et al., 1999; Rohm & Swaminathan, 2004) Moreover, the ability to shop anytime or anywhere is a big benefit of internet shopping (McKinney, 2004; Kim and Kim, 2004 as quoted in Delafrooz et.al (2010).

Agreeing with Chiu et. al. (2009), online shopping is a time, money, and effort exchange for getting products or services. Traditional shopping was thought to take longer than online shopping, therefore online shopping was seen as more appealing (Alreck and Settle, 2002). Likewise, Malaysian Internet customers shopping online look for benefits such as lower costs, convenience, cost savings, simple way to find info, and 24-hour assistance (Zuriahti Azura, 2010).

Based on the view from Rohm and Swaminathan (2004), convenience refers to reduced time and effort consumers save while purchasing online. Reduced time and effort reductions were fragment of the complete shopping convenience concept. (Rohm & Swaminathan, 2004; Bellenger & Korgaonkar, 1980; Eastlick & Feinberg, 1999, cited in Rohm & Swaminathan, 2004). Convenience showed a convincing link and a significant beneficial influence towards online purchasing interest, according to the study. Furthermore, when the other eight criteria are included, it is the third strongest predictor that Crazy Domain's workers will purchase online (Akbar & James, 2014).

Convenience, freedom of choice, info enhancement, and established site outline are all factors that influence consumers' perceptions on online purchasing (Shwu-Ing, 2003). Besides, the convenience factors strongly linked to online advertising purchasing behaviour (Hasan and

Rahim, 2004). Chiang (2001) investigated influence of creation form, convenience, and price on consumers' intention to purchase online, discovered that prices and conveniences had an impact on consumer intent, but the report had no significant impact on product categories. Furthermore, the findings of Delafrooz, Sidin, Paim, Khatibi, and Haron (2009) show that convenience, price, broader variety, and customer service are the greatest recurrent variables influencing consumers' intention to purchase online.

Security and privacy issues are frequently listed as among primary causes why consumers are afraid making online transactions (George, J. F., 2004). There are many different facets of security and privacy when it comes to the Internet, of course. Byford (1998) concentrated on two distinct hypothetical features of privacy: a common connections viewpoint and a property perspective (Byford, 1998) Security and privacy are seen as a counterbalance to the growth of social interactions in the social relationship's perspective. Security and privacy are crucial mechanisms in social processes, right to be left alone as defined by American law. On the online, this concept of protection and privacy would take the shape of anonymous interactions and assumed identities on the Internet, such as in discussion rooms and MUDs, where associates of various Internet forums worked out their social connections.

Major barriers to implementing electronic retail beliefs in security and privacy concerns, according to Ramayah, Teck, Aafaqi, and Dahlan (2003), are that technology must be improved, and user security and privacy must be assured and guaranteed for increasing online purchasing. Consumers are hesitant to undertake Internet purchases, in part because to purchasing obstacles, as well as security and privacy concerns (Grandinetti, 1996; Udo, 2001). The online user places a high value on privacy and security; consumers want to sense of security and have their personal information protected. As a result, the government must safeguard consumer security and privacy, which is among the most important responsibilities that the government can play in promoting the expansion of online shopping (Yu and Abdulai, 2000).

### **Method**

The research framework, which provides the foundation for the research hypotheses, contains the most crucial components of the research process. Figure 1's dependent and independent variables illustrate how these two variables are related to one another. A research paradigm has been established using perceived usefulness, perceived ease of use, reduced time, convenience, security, and privacy as independent factors and online shopping during the COVID-19 Pandemic as the dependent variable. When measuring the determinants influencing internet buying among students in tertiary institutions during the COVID-19 Pandemic, the independent variables are employed as intermediate variables on a nominal scale. Within a six-month period, the investigation was carried out employing convenience sampling using a cross-sectional survey. Questionnaires were distributed to respondents using Google Form and pencil and paper method.

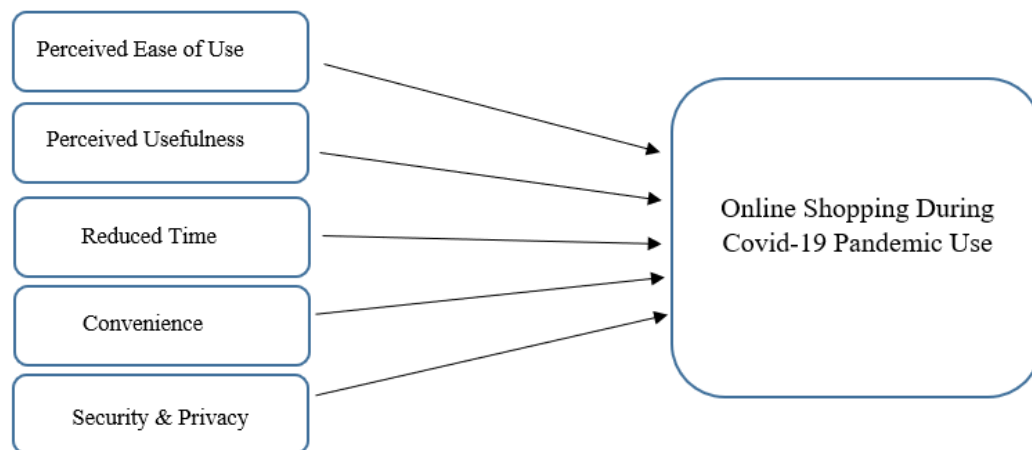


Figure 1: Research Framework

### Findings

Table 1 provides a summary of the demographic data gathered for this study, which included 200 respondents who are students at higher education institutions.

Table 1: Demographic Information

Criteria	Category	Frequency	Percentage
Gender	Male	101	50.5%
	Female	99	49.5%
Age Group	18-20	8	4.0%
	21-25	166	83.0%
	26-39	26	13.0%
Race	Malay	7	3.5%
	Chinese	193	96.5%
Marital Status	Single	141	70.5%
	In-relationship	48	24.0%
	Married	11	5.5%
Education Level	SPM and below	7	3.5%
	Foundation	1	0.5%
	Diploma / Advanced Diploma	31	15.5%
	Bachelor Degree	161	80.5%
Monthly Income/ Allowance	RM 1,000 or below	149	74.5%
	RM 1,001 to RM 2,000	16	8.0%
	RM 2,001 to RM 3,000	19	9.5%
	RM 3,001 or above	16	8.0%
Monthly Online Purchase	None	4	2.0%
	1-2 times	133	66.5%
	3-5 times	44	22.0%
	More than 5 times	19	9.5%

Table 2: Reliability Analysis

Styles	Number of Items	Cronbach's Alpha
<u>Dependent Variable</u>		
Online Shopping during Covid-19 pandemic	4	0.891
<u>Independent Variables</u>		
Convenience	3	0.861
Perceived Ease of Use	4	0.890
Perceived Usefulness	4	0.902
Reduced Time	3	0.826
Security and Privacy	3	0.858

Cronbach's Alpha values are estimated to be relevant by reliability analysis in order to assess the dependability of study variables. Table 4.3.1 displays the values for the dependent and independent variables. The preceding table contains variables with values between 0.826 and 0.902. A Cronbach's Alpha rating of more than 0.8 is generally regarded as good, while one of more than 0.9 is regarded as great. Since the Cronbach Alpha values for each variable in this study are all over 0.8, they are all good variables.

The independent variable with the best reliability among the other independent variables is perceived usefulness, which has four items and a Cronbach's Alpha score of 0.902. With a Cronbach's Alpha of 0.890 for four questions, perceived ease of use has the second-highest reliability among the independent variables. Convenience is a second independent variable that has three items and a Cronbach's Alpha score of 0.861.

Another two independent variables which are security and privacy and reduced time, had Cronbach's Alpha values of 0.858 and 0.826, respectively with three items of each. The dependent variable for online shopping during the Covid-19 pandemic has a Cronbach's Alpha value of 0.891 and 4 items.

Table 3: Coefficients

Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.
	B	Std Error	Beta		
(Constant)	0.434	0.178		2.434	0.016
Convenience	0.252	0.065	0.266	3.850	0.000
Perceived Ease of Use	0.099	0.076	0.099	1.302	0.194
Perceived Usefulness	0.049	0.074	0.052	0.662	0.509
Reduced Time	0.431	0.066	0.438	6.534	0.000
Security and Privacy	0.087	0.035	0.111	2.483	0.014

Multiple linear regression analysis is used to show the link between dependent and independent variables in Table 3. When the significant value does not exceed 0.05, the hypothesis is accepted; nevertheless, when the significant value does exceed 0.05, the hypothesis is rejected. Five independent variables are investigated in this study, three of which are significant. The dependent variable has a significant relationship with the three independent variables of convenience, reduced time, security, and privacy. However, the dependent variable and two independent variables, perceived ease of use and perceived usefulness, have no significant relationship. Hypothesis 2 and 3 are likewise not supported as a result of this.



Based on Table 4., the hypothesis 1, 4 and 5 are supported in this research which are convenience, reduced time, security and privacy. However, the hypothesis 2 and 3 are not supported in this research which are perceived ease of use and perceived usefulness.

Table 3: Hypotheses Summary

Hypotheses	Description	P-Value	Result
H1	There is a positive significant relationship between convenience and students' perception on online shopping during Covid-19 pandemic	0.000	Supported
H2	There is a positive significant relationship between perceived ease of use and students' perception on online shopping during Covid-19 pandemic.	0.194	Not Supported
H3	There is a positive significant relationship between perceived usefulness and students' perception on online shopping during Covid-19 pandemic.	0.509	Not Supported
H4	There is a positive significant relationship between reduced time and students' perception on online shopping during Covid-19 pandemic.	0.000	Supported
H5	There is a positive significant relationship between security and privacy and students' perception on online shopping during Covid-19 pandemic.	0.014	Supported

## Discussion and Conclusion

The ultimate aim of this study is to learn about and analyse the elements that involving students' perception on online shopping during Covid-19 pandemic. Variables derived include convenience, perceived ease of use, perceived usefulness, reduced time, security and privacy. Respondents were students from Institutions of Higher Learning in Malaysia.

The research investigates about the students' perception of factors on online shopping during Covid-19 pandemic. By recognising the effect of the independent factors indicated above on the dependent variable, which is online shopping during Covid-19 pandemic, university students are becoming the online seller's target market in Malaysia. As a result, the online seller will continue to enhance their service. The rationale is that they can figure out what factors impact pupils' grasp of online buying and concentrate on it.

Furthermore, this research will benefit not just online sellers including any business or organization that plans to convert their business to an online model. If students are their target market, this study can help them achieve a smooth start in e-commerce and improve their function of operation in the future. In addition, the pandemic triggered a surge in internet sales. Because physical store visits were limited and many people were short on cash, customers turned to the internet to shop, leading online transactions to skyrocket. Even before the epidemic, consumers were typically cautious purchasers. Therefore, several buying categories, such as experiences, have steadily been pushed down priority lists, and Covid-19 has expedited this trend. Last but not least, the Covid-19 pandemic has transformed many people's lifestyles and motives, as well as their spending habits.

Moreover, online sellers may minimize redundant online purchasing processes and improve the quality of online shopping by improving the ordering procedure, which allows customers to browse for items and place orders in a few simple steps. Aside from that, the online seller might improve their security and privacy system to make customers feel safer when purchasing

online. As a result, consumers feel that purchasing online will save them time and effort. Online sellers might run promotions or provide special discounts to encourage students to shop online, since they desire lower prices.

According to this study, the independent factors of convenience, reduced time, security and privacy had a positive significant influence on the dependent variable of online shopping during the Covid-19 pandemic. The research findings may be used by online sellers to improve their E-Commerce operations.

From this study, it shows that businesses should have a strong online presence and a user-friendly e-commerce platform. To do this, business owners should invest in creating a website or online store that is easy to navigate, secure, and offers a seamless shopping experience to attract and retain customers. Additionally, companies should be adaptable and flexible in response to changing customer needs and preferences. They should think of diversifying their products and services via the online platform.

There are several limitations in this research. First and foremost, just 200 people were surveyed for this study. The sample size is insufficient to support the perceptions of university students about online shopping during the Covid-19 pandemic. The results were unsatisfactory due to the limited sample size, since perceived ease of use and perceived usefulness were shown to have no significant association. Next, the constraint reduces to not able to attain equal distribution in demographic profile. There is a significant difference in age and racial groups. Second, the time constraint has an impact on the number of independent variables to investigate in this study. Convenience, perceived ease of use, perceived usefulness, reduced time, security, and privacy are the independent variables in this study. Several attitudes among these characteristics may affect students' perceptions on online shopping during the Covid-19 pandemic.

Third, the study was conducted during the MCO period. Malaysia had implemented mobility controls in reaction to the Covid-19 pandemic, forcing individuals to stay at home, which had a direct impact on the authenticity and reliability of respondents' replies. Aside from that, the data was gathered via a Google form so this caused some unreliable responses. For example, respondents may believe that the survey is a waste of time and hence complete the poll without reading all of the remarks, and other respondents may be uninterested in the issue. These behaviours will have a direct impact on the data's accuracy.

Following the limitations of this study, there are a few recommendations for further research. In order to overcome the first limitation, future researchers should expand the sample size of respondents. This will ensure that the data is accurate and dependable. Researchers can more evenly distribute questionnaires depending on race or age groups.

For the second limitation, the future researcher should add more independent variables such as perceived price, perceived enjoyment and trust in order to obtain the variables that impact students' perception on online shopping during Covid-19 pandemic. Different independent variables that are investigated in a new study or research may yield fresh information on online shopping intent.

Additionally, while this study only looked at online purchase intentions among Malaysian university students, future research might look at online buy intentions among university students in other countries including Singapore, Taiwan, and Western countries. Furthermore, one of the recommendations for future research is to re-examine the independent factors that were not significant in the study. Although perceived ease of use and perceived usefulness had no significant relationship in this study, researchers can revisit these factors and find different results in future research.

Lastly, the third limitation is that, now that the world has begun to cohabit with the coronavirus, future researchers may choose to distribute the questionnaire in physical form. As a result,

future researchers will be able to clarify concepts and statements face to face while collecting data. This is to ensure that respondents do not misunderstand the statement and pick an incorrect answer, affecting the data's accuracy.

## References

- Afacan, E. and Avcı, N. (2020), “Koronavirus (Covid-19) € Orne € gi Uzerinden Salg € ın Hastalıklara Sosyolojik Bir Bakıs,” *Avrasya Sosyal ve Ekonomi Aras,tırmaları Dergisi*, Vol. 7 No. 5, pp. 1-14, available at: <https://dergipark.org.tr/tr/download/article-file/1128143>.
- Ahmad, N., Omar, A., & Ramayah, T. (2010). Consumer lifestyles and online shopping continuance intention. *Business Strategy Series*, 11(4), 227-243.
- Ajzen I, Fishbein M (1980). *Understanding Attitude and Predicting Social Behavior*. New Jersey: Prentice-Hall.
- Akram, M. S. (2018). Drivers and Barriers to Online Shopping in a Newly Digitalized Society. *TEM*
- Alpago, H. and Oduncu Alpago, D. (2020), “Korona Virus ve Sosyoekonomik Sonuçlar € ”, *IBAD Sosyal Bilimler Dergisi* No. 8, pp. 99-114, doi: 10.21733/ibad.716444.
- Alreck, P. and Settle, R. (2002). The hurried consumer: time-saving perceptions of internet and catalogue shopping. *Journal of Database Marketing*, 10(1), pp. 25-35. In *Business Source Complete (OUM digital collection)*.
- Anesbury, Z., Nenycz-Thiel, M., Dawes, J. and Kennedy, R. (2016), “How do shoppers behave online? An observational study of online grocery shopping”, *Journal of Consumer Behaviour*, Vol. 15 No. 3, pp. 261-270.
- Baker, S.R., Bloom, N., Davis, S.J. and Terry, S.J. (2020), *Covid-induced Economic Uncertainty (No. W26983)*, National Bureau of Economic Research, Cambridge, MA, available at: <https://www.nber.org/papers/w26983>.
- Bavel, J.J.V., Baicker, K., Boggio, P.S., Capraro, V., Cichocka, A., Cikara, M., Crockett, M.J., Crum, A.J., Douglas, K.M., Druckman, J.N., Drury, J., Dube, O., Ellemers, N., Finkel, E.J., Fowler, J.H., Gelfand, M., Han, S., Haslam, S.A., Jetten, J., Kitayama, S., Mobbs, D., Napper, L.E., Packer, D.J., Pennycook, G., Peters, E., Petty, R.E., Rand, D.G., Reicher, S.D., Schnall, S., Shariff, A., Skitka, L.J., Smith, S.S., Sunstein, C.R., Tabri, N., Tucker, J.A., van der Linden, S., van Lange, P., Weeden, K.A., Wohl, M.J.A., Zaki, J., Zion, S.R. and Willer, R. (2020), “Using social and behavioural science to support COVID-19 pandemic response”, *Nature Human Behaviour*, Vol. 4, pp. 460-471, doi: 10.1038/s41562-020-0884-z.
- Beneke, J., Scheffer, M., & Du, W. (2010). Beyond price – An exploration into the factors that drive young adults to purchase online. *International Journal of Marketing Studies*, 2, 212–222.
- Boyer, K. K. (2005). Customer behavior in an online ordering application: A decision scoring model.
- Burke, Raymond R. (1998). Do you see what I see? The future of virtual shopping. *Journal of the Academy of Marketing Science*, 25, 352–360.
- Byford, K.S. (1998), “Privacy in cyberspace: constructing a model of privacy for the electronic communications environment”, *Rutgers Computer & Technology Law*
- Celik, H. (2016), “Customer online shopping anxiety within the unified theory of acceptance and use technology (UTAUT) framework”, *Asia Pacific Journal of Marketing and Logistics*, Vol. 28 No. 2, pp. 278-307.

- Chellappa, R. (2002). Customers' trust in electronic commerce transactions: The role of perceived privacy and perceived security. Atlanta: Emory University.
- Chen, J. H., Xie, X. Y., & Jing, F. X. (2011). The security of shopping online. *International Conference on Electronic & Mechanical Engineering and Information Technology*, 4693-4696.
- Chen, Y. H., Hsu, I. C., & Lin, C. C. (2010). Website attributes that increase consumer purchase intention: A conjoint analysis. *Journal of Business Research*, 63, 1007–1014.
- Cheng, B. L., & Yee, S.W. (2014). Factors Influencing Consumers' Online Purchase Intention: A Study among University Students in Malaysia. *International Journal of Liberal Arts and Social Science*, 2(8), 121–133. <http://doi.org/10.5539/ass.v10n9p18>
- Chiang, Kuan-Pin. (2001). Effects of price, product type and convenience on consumer intention to shop online. In Ram Krishnan and Madhu Viswanathan (Eds.), *Proceedings of AMA Winter Educators' Conference*, Vol. 12, pp. 163–169. Chicago: American Marketing Association.
- Childers TL, Carr CC, Peck J, Carson S (2001). Hedonic and Utilitarian motivations for online retail shopping behavior. *J. Retailing* 77: 511-535.
- Chiu, C.-M., Lin, H.-Y., Sun, S.-Y. and Hsu, M.-H. (2009), "Understanding customers' loyalty intentions towards online shopping: an integration of technology acceptance model and fairness theory", *Behavior & Information Technology*, Vol. 28 No. 4, pp. 347-60. In EBSCOhost (OUM digital collection).
- Chiu, C.M., Wang, E.T., Fang, Y.H. and Huang, H.Y. (2014), "Understanding customers' repeat purchase intentions in B2C e-commerce: the roles of utilitarian value, hedonic value and perceived risk", *Information Systems Journal*, Vol. 24 No. 1, pp. 85-114.
- Cho, Y.C. and Sagynov, E. (2015), "Exploring factors that affect usefulness, ease of use, trust, and purchase intention in the online environment", *International Journal of Management & Information Systems*, Vol. 19 No. 1, pp. 21-36.
- Chou, C. M., & Kimsuwan, A. (2013). Factors Affecting Purchase Intention of Online Game Prepayment Card – Evidence from Thailand. *Journal of Internet Banking and Commerce*, 18(3), 1–14.
- Cirakoglu, O.C. (2011), "Domuz Gribi (H1N1) Salginiyla Iliskili Algilarin, Kaygi ve Kacinma Duzeyi Degiskenleri Baglaminda Incelenmesi", *Turk Psikoloji Dergisi*, Vol. 26 No. 67, pp. 49-64, available at: <https://www.psikolog.org.tr/tr/yayinlar/dergiler/1031828/tpd1300443320110000m000096.pdf>.
- Clemes, M.D., Gan, C. and Zhang, J. (2014), "An empirical analysis of online shopping adoption in Beijing, China", *Journal of Retailing and Consumer Services*, Vol. 21 No. 3, pp. 364-375.
- Davis FD (1989). Perceived Usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quart.* 13: 319-340.
- Davis FD, Bagozzi RP, Warshaw PR (1989). User acceptance of computer technology: a comparison of two theoretical models. *Manag. Sci.* 35(8): 982-1003.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13 (3), 319-340.
- Delafrooz, N., Paim, L. H., & Khatibi, A. (2010). Students' Online Shopping Behavior: An Empirical Study. *Journal of American Science*, 6(1), 137–147.
- Delafrooz, N., Paim, L. H., Haron, S. A., Sidin, S. M., & Khatibi, A. (2009). Factors affecting students attitude toward online shopping. *African Journal of Business Management*, 3(5), 200-209.

- Delafrooz, N., Paim, L.H. and Khatibi, A. (2011), "Understanding consumer's internet purchase intention in Malaysia", *African Journal of Business Management*, Vol. 5 No. 3, pp. 2837-2846.
- Delafrooz, Narges, Laily H. Paim<sup>1\*</sup>, Sharifah Azizah Haron<sup>1</sup>, Samsinar M. Sidin<sup>2</sup> and Ali Khatibi<sup>3</sup> (2009). Factors Affecting Students' Online Shopping Attitude and Purchase Intention. PhD thesis, Universiti Putra Malaysia. [Online]. Available: [http://academicjournals.org/article/article1380535988\\_Delafrooz%20et%20al..pdf](http://academicjournals.org/article/article1380535988_Delafrooz%20et%20al..pdf) [2013, July 20].
- Donmez, I. and Gurbuz, S. (2020), "Universite Ogrencilerin covid-19 Virusu Hakkinda Bilissel Yapilarinin belirlenmesi", *MANAS Sosyal Arastirmalar Dergisi*, Vol. 9 No. 4, pp. 2159-2172, doi: 10.33206/mjss.763029.
- Forster, P.W. and Tang, Y. (2005), "The role of online shopping and fulfillment in the Hong Kong SARS crisis", *Proceedings of the 38th Annual Hawaii International Conference on System Sciences*, Presented at the Proceedings of the 38th Ann.
- Hasan, H., & Rahim, S. A. (2004). Factors affecting online purchasing behavior. *Journal of Communication*, 24, 1-19. [Online]. Available: <http://sssums.files.wordpress.com/2007/11/factorsaffecting-online-purchasingbehavior.pdf> [2013, Sept 22].
- Horrigan John B. (2008). *Online shopping*. Washington, DC: Pew Internet Life & American Project.
- Horrigan, J. B. (2009, February 15). *Online Shopping: Convenient But Risky*. Retrieved from [pewresearch.org](http://pewresearch.org): <http://pewresearch.org/pubs/733/onlineshopping>
- Hung, S.Y., Chen, C.C. and Huang, N.H. (2014), "An integrative approach to understanding customer satisfaction with e-service of online stores", *Journal of Electronic Commerce Research*, Vol. 15 No. 1, pp. 40-57.
- Jarvenpaa, Sirkka L., & Todd, Peter A. (1997). Is there a future for retailing on the Internet? In Robert A. Peterson (Ed.), *Electronic marketing and the consumer* (pp. 139–154). Thousand Oaks, CA: Sage.
- Jiang, L., Yang, Z., & Jun, M. (2013). Measuring consumer perceptions of online shopping convenience. *Journal of Service Management*, 24(2), 191-214.
- Jognston, R. (1997). Identifying the critical determinant of service quality in retail banking: important  
*Journal of Advanced Research in Computer and Communication Engineering*, 2885-2895.
- Keisidou, E., Sarigiannidis, L., & Maditinos, D. (2011). Consumer characteristics and their effect on accepting online shopping, in the context of different product types. *Int. Journal of Business Science and Applied Management*, 6(2), 32-51.
- Kim, D.J., Ferrin, D.L. and Rao, H.R. (2008), "A trust-based consumer decision-making model in electronic commerce: the role of trust, perceived risk, and their antecedents", *Decision Support Systems*, Vol. 44 No. 2, pp. 544-564.
- Korgaonkar, P., Petrescu, M. and Becerra, E. (2014), "Shopping orientations and patronage preferences for internet auctions", *International Journal of Retail & Distribution Management*, Vol. 42 No. 5, pp. 352-368.
- Management and Science*, 725-737.
- Mastercard Worldwide Insights (2008). "Online shopping in Asia-Pacific -patterns, trends and future growth", Retrieved from [www.mastercard.com/us/company/en/insights/studies/2008/asiaonlineshopping.html](http://www.mastercard.com/us/company/en/insights/studies/2008/asiaonlineshopping.html)
- Meskaran, F., Ismail, Z., & Shanmugam, B. (2013). Online Purchase Intention: Effects of Trust and Security Perception. *Australian Journal of Basic and Applied Sciences*, 7(6), 307–315.

- Monuwe, T. P., Dellaert, B. G., & Ruyter, K. d. (2004). What drives consumers to shop online? A literature review. *International Journal of Service Industry Management*, 15 (1), 102-121.
- Motivation of online buyer behavior. *Journal of Competitiveness*. (n.d.). Retrieved November 6, 2021, from <https://doi.org/10.7441/joc.2013.03.02>.
- Mudaa, M, Mohdb, R., & Hassan, S. (2016). Online purchase behavior of generation Y in Malaysia: *procedia economics and finance*, 37, 292 – 298.
- Quarterly Journal of Electronic Commerce*, 83-104.
- Rahman, M. A., Islam, M. A., Esha, B. H., Sultana, N., & Chakravorty, S. (2018). Consumer shopping behavior towards online shopping: An empirical study on Dhaka city, Bangladesh. *Cogent Business & Management*, 5(1), 1514940. <https://doi.org/10.1080/23311975.2018.1514940>
- Rahmiati. (2017). The influence of individual and system characteristic toward digital library usage. *International Journal of Management and Applied Science*, 3(6), 99-102. ISSN: 2394-7926.
- Ramayah, T., & Ignatius, J. (2005). Impact of perceived usefulness, perceived ease of use and perceived enjoyment on intention to shop online. *ICFAI Journal of Systems Management*, 3(3), 36-51.
- Ramayah, T., Dahlan, N., Teck., T.K., & Aafaqi, B. (2003). Perceived web security and web-based online transaction intent, *Multi Media Cyberspace Journal*, vol.1 [Online] Available: <http://cyberscape.mmu.edu.my/>.
- Renny, Guritno, S., & Siringoringo, H. (2013). Perceived Usefulness, Ease of Use, and Attitude Towards Online Shopping Usefulness Towards Online Airlines Ticket Purchase. *Procedia - Social and Behavioral Sciences*, 81, 212–216. <http://doi.org/10.1016/j.sbspro.2013.06.415>
- Rizwan, M., Umair, S. M., Bilal, H. M., Akhtar, M., & Bhatti, M. S. (2014). Determinants of customer intentions for online shopping: A Study from Pakistan. *Journal of Sociological Research*, 5(1), 248–272. <http://doi.org/10.5296/>
- Rohm, A. J., & Swaminathan, V. (2004). A Typology of Online Shoppers Based on Shopping Motivations. *Journal of Business Research*, 57, 748-757.
- Schaupp, L. C., & Belanger, F. (2005). a Conjoint Analysis of Online Consumer Satisfaction 1. *Journal of Electronic Commerce Research*, 6(2), 95–111.
- Selamat, Z., Jaafar, N., & Boon, O. H. (2009). Technology Acceptance in Malaysian Banking Industry. *European Journal of Economics. Finance and Administrative Sciences*, 17.
- Svatosova, V. (2013). Motivation of Online Buyer Behavior. *Journal of Competitiveness*, 5(3), 14–30.
- Swaminathan, V., Lepkowska-White, E. and Rao, B. P. (1999). Browsers or Buyers in Cyberspace? An Investigation of Factors Influencing Electronic Exchange. *Journal of ComputerMediated Communication*, 5(2).
- Teck, T.K. (2002). The Impact of Perceived Web Security, Perceived Privacy Loss, Perceived Usefulness and Perceived Ease of Use on the Web-Based Online Transaction Intent, MBA Thesis, School Of Management, Universiti Sains Malaysia, Penang.
- TEM Journal - Technology, Education, management, Informatics. (n.d.). Retrieved November 6, 2021, from <https://doi.org/10.18421/TEM71-14>.
- Top e-commerce sites in Malaysia 2017. (2017, November 14). Retrieved from <https://aseanup.com/top-e-commerce-sites-malaysia/>
- Udo, G.J. (2001). Privacy and security concerns as major barriers for e-commerce: a survey study. *Information Management & Computer Security*, vol. 9, pp. 165-174.

- Vijayasathy, L. R. (2002). Internet taxation, privacy and security: Opinions of the taxis and legislated .
- WHO (2020), “Rational use of personal protective equipment for coronavirus disease (COVID-19) and considerations during severe shortages”, available at: [https://www.who.int/publications/i/item/rational-use-of-personal-protective-equipment-for-coronavirus-disease-\(covid-19\)-andconsiderations-during-severe-shortages](https://www.who.int/publications/i/item/rational-use-of-personal-protective-equipment-for-coronavirus-disease-(covid-19)-andconsiderations-during-severe-shortages) (accessed 31 May 2020).
- World Health Organization (2020), “Weekly epidemiological update - 29 December 2020”, 29 December, available at: <https://www.who.int/publications/m/item/weekly-epidemiologicalupdate—29-december-2020> (accessed 22 April 2021).
- Yu, C.M., & Abdulai, D.N. (2000). E-commerce and the new economy: The Proceedings of International Conference On Electronic Commerce, Emerging Trends in E-Commerce, Kuala Lumpur, Malaysia, November, Multi Media University.
- Zarrad, H., & Debabi, M. (2012). Online Purchasing Intention: Factors and Effects. *International Business and Management*, 4(1), 37–47. <http://doi.org/10.3968/j.ibm.1923842820120401.2115>
- Zhou, L., Dai, L. W., & Zhang, D. S. (2007). Online shopping acceptance model- a critical survey of consumer factors in online shopping. *Journal of Electronic Commerce Research*, 8(1), 41-42.
- Zuriahti Azura, R. (2010). The Influence of the Intention Online Purchase Among Universiti Kuala Lumpur, Malaysian Institute of Information Technology Lecturer’s and Staff’s. Unpublished Final Year Project, Malaysian Institute of Information Technology, Universiti Kuala Lumpur, Malaysia.